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(REV. 7-2005)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER
9301-237-999

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A SUBMISSION UNDER 35 U.S.C. 371**

U.S. APPLICATION NO. (if known, see 37CFR 1.5)

10/567282

INTERNATIONAL/APPLICATION NO.
PCT/US2004/017754

INTERNATIONAL FILING DATE
June 4, 2004

PRIORITY DATE CLAIMED
August 5, 2003

TITLE OF INVENTION

COMPUTER SYSTEMS AND METHODS FOR INFERRING CAUSALITY FROM CELLULAR CONSTITUENT ABUNDANCE DATA

APPLICANT(S) FOR DO/EO/US

Eric E. Schadt and Stephanie A. Monks

Applicant herewith submits to the United States Designated/ Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☒ The U.S. has been elected (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ has been communicated by the International Bureau.
 - c. ☒ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)) - unexecuted.
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 20. below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A preliminary amendment.
14. ☐ An Application Data Sheet under 37 CFR 1.76.
15. ☐ A substitute specification.
16. ☐ A power of attorney and/or change of address letter.
17. ☒ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter 2 and 37 CFR 1.821- 1.825.
18. ☐ A second copy of the published International Application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the International Application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information: International Publication No. WO 2005/017652 A2 dated February 24, 2005 (of PCT/US2004/017754)

This collection of information is required by 37 CFR 1.414 and 1.49.1-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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|--|--------------|--|------------|--|------------------|
| US APPLICATION NO. (If known, see 37 CFR 1.55) 10/567282 | | INTERNATIONAL APPLICATION NO. PCT/US2004/017754 | | ATTORNEY'S DOCKET NUMBER 9301-237-999 | |
| The following fees are submitted: | | | | | |
| 21. <input checked="" type="checkbox"/> Basic national fee | | | | \$300.00 | |
| 22. <input checked="" type="checkbox"/> Examination fee..... | | | | | |
| Was the Written Opinion prepared by the ISA/USPTO or did the International Preliminary Examination Report prepared by the USPTO indicate that all filed claims in this U.S. application satisfy provisions of PCT Article 33(1)-(4) (i.e., novelty, inventive step and industrial capability)? | | | | | |
| <input type="checkbox"/> i) Yes (\$0.00)..... | | | | \$200.00 | |
| <input checked="" type="checkbox"/> ii) No (\$200.00)..... | | | | | |
| 23. <input checked="" type="checkbox"/> Search fee | | | | | |
| Did the Written Opinion of the ISA/USPTO or the International preliminary examination report prepared by the USPTO indicate that all claims satisfy provisions of PCT Article 33(1)-(4) (i.e., novelty, inventive step and industrial capability)? | | | | | |
| <input type="checkbox"/> i) Yes (\$0.00)..... | | | | \$100.00 | |
| ii) If no: | | | | | |
| <input checked="" type="checkbox"/> (a) A Search Fee has been paid on the international application to the USPTO as an International Search Authority. (\$100.00) | | | | | |
| <input type="checkbox"/> (b) An International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB. (\$400.00) | | | | | |
| <input type="checkbox"/> (c) All other situations (\$500.00)..... | | | | | |
| TOTAL OF CALCULATIONS = | | | | \$ | \$600.00 |
| <input checked="" type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing of computer programs listing filed in electronic medium). The fee is \$250 for each additional 50 sheets of paper or fraction thereof. | | | | | |
| Total Sheets | Extra Sheets | Number of each additional 50 or fraction thereof (round up to a whole number). | RATE | | |
| 385 - 100 | 285 /50 | 6 | x 250.00 | \$1500.00 | |
| <input checked="" type="checkbox"/> Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492 (e)). | | | | \$ | \$130.00 |
| CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE X | | |
| Total Claims | 100 - 20 | 80 | x \$50.00 | \$4000.00 | |
| Independent Claims | 8 - 3 | 5 | x \$200.00 | = | \$1000.00 |
| <input checked="" type="checkbox"/> MULTIPLE DEPENDENT CLAIM(S) (if applicable) | | | + 360.00 | \$360.00 | |
| TOTAL OF ABOVE CALCULATIONS= | | | | = \$ | \$7590.00 |
| <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 50% | | | | - \$ | \$0.00 |
| SUBTOTAL = | | | | \$ | \$7590.00 |
| Surcharge of \$130.00 for furnishing the English Translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)). | | | | | \$0.00 |
| TOTAL NATIONAL FEE | | | | = \$ | \$7590.00 |
| Fee for recording the enclosed assignment (37 CFR 1.21 (h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). 1 x \$40.00 per property | | | | \$ | \$0.00 |
| TOTAL FEES ENCLOSED | | | | = \$ | \$7590.00 |
| | | | | Amount to be refunded: | |
| | | | | charged: \$7590.00 | |
| a. <input type="checkbox"/> A check in the amount of \$ to cover the above fees is enclosed. | | | | | |
| b. <input checked="" type="checkbox"/> This is an estimate of the fees due. Please charge Deposit Account No. 50-3013 to cover the required fees. A copy of this sheet is enclosed. | | | | | |
| c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-3013. A copy of this sheet is enclosed. | | | | | |
| Note: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the International Application to pending status. | | | | | |
| 24. <input checked="" type="checkbox"/> All correspondence for this application should be mailed to JONES DAY 20583 | | | | | |
| 25. <input checked="" type="checkbox"/> All telephone inquiries should be made to Adriane M. Antler at (212) 326-3939. | | | | | |
| Adriane M. Antler | | <i>Adriane M. Antler</i> | | 32,605 | February 3, 2006 |
| NAME | | SIGNATURE | | REG. NO. | DATE |

10/567282

Express Mail No.: EV 686 022 523 US

RECEIVED PCT/PTO 03 FEB 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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|-----------------|---|-------------------|------------------|
| Application of: | Schadt <i>et al.</i> | Confirmation No.: | To be determined |
| Serial No.: | To be assigned, National Stage of International Application No. PCT/US2004/017754 | Art Unit: | To be determined |
| Filed: | June 4, 2004 | Examiner: | To be assigned |
| For: | COMPUTER SYSTEMS AND METHODS FOR INFERRING CAUSALITY FROM CELLULAR CONSTITUENT ABUNDANCE DATA | Docket No.: | 9301-237-999 |

TRANSMITTAL OF SEQUENCE LISTING

Mail Stop PCT
 Commissioner for Patents
 P. O. Box 1450
 Alexandria, Virginia 22313-1450

Sir:

In connection with the above-identified application, and in accordance with 37 C.F.R. § 1.821, Applicants submit herewith a Sequence Listing in paper and computer-readable format pursuant to 37 C.F.R. §§ 1.821(c) and (e).

I hereby state that the content of the paper and computer-readable copies of the Sequence Listing, submitted in accordance with 37 C.F.R. §§ 1.821(c) and (e), respectively, are the same and add no new matter to the instant application. I further hereby state that the content of the paper and computer-readable copies of the Sequence Listing submitted herewith are identical to the sequence listing filed in International Application No. PCT/US2004/017754 on October 29, 2004 in response to the Invitation to Furnish a Nucleotide and/or Amino Acid Sequence Listing Complying with Standard issued by the International Searching Authority on September 30, 2005.

Date February 3, 2006

Respectfully submitted,

Adriane M. Antler
 Adriane M. Antler

JONES DAY
 222 East 41st Street
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42,713
 32,605

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Enclosures